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**Abstract:** In this paper we use fuzzy set method to solve one of the important problems in mechanical engineering (risk when extend the service life). The residual service life for rolling stock can change depending on its using conditions. The paper offers a new method depending on fuzzy set method by using the material mechanical and chemical corrosion mathematical model to determine the residual service life for rolling stock with the value of risk of it’s usage in future.

**Keywords:** The residual service life for rolling stock can change depending on it’s using conditions.

**References:**

**Abstract:** A novel technique is introduced to design a wideband, compact bandstop filter (BSF). This filter consists of a numbers of spur line resonators arranged in a log-periodic manner. The stop band of the filter is centered at 5 GHz for wireless application. Using the proposed technique the fractional bandwidth is enhanced from 7% to 68% when the individual spurline resonators are applied as log-periodic filter. There is a good agreement between the measured and simulated performances. This kind of filter is very much compact in nature as compared to the shunt stub or coupled-line bandstop filters since the spurline structure is confined to a transmission line.

**Keywords:** Spur line, bandstop filter, log periodicity, wide band.

**References:**

**Abstract:** This paper investigates the effect of different cutting parameters (cutting speed, feed rate, and depth of cut) on cutting force components and material removal rate (MRR) in dry and wet hard turning processes. The workpiece material, hardened alloy steel AISI 52100, was machined on a CNC lathe with coated carbide tool under different settings of cutting parameters. Three cutting parameters each at three levels were considered in the study. Central composite design (CCD) of experiment was used to collect experimental data for cutting force components and MRR. The results were analyzed using an effective procedure of response surface methodology (RSM) to determine optimal values of cutting parameters. Statistical analysis of variance (ANOVA) was performed to determine significance of the cutting parameters. Several diagnostic tests were also performed to check the validity of assumptions. The results indicate that cutting force components are influenced principally by the depth of cut, while the effect of both cutting speed and feed rate is small. On the other hand, the depth of cut has the most significant effect on the MRR; the cutting speed has less significant effect whereas feed rate has the lowest effect. Finally, the ranges for best cutting parameters and model equations to predict the cutting force components and MRR are proposed.
Keywords: Cutting forces, Material removal rate, Dry turning, Castrol coolant, Hard alloy steel

References:

Authors: Intissar Tolihr, Rim Ayadi, Mohamed Masmoudi

Paper Title: Improvement of the Oscillation Frequency Characteristic of Conventional Voltage Controlled Ring Oscillator

Abstract: A new design of a Voltage Controlled Ring Oscillator is proposed in this paper in order to improve the oscillation frequency characteristic. The structure and the operation of proposed Voltage Controlled Ring Oscillator have been described. The new VCO is implemented and simulated by using ADS platform with 0.35um AMS CMOS technology; this circuit uses relatively small devices dimensions and low power supply 2V to operate in a large range frequency. In addition, the proposed structure enables the output signal of the VCO to oscillates between ‘‘0’’ and ‘‘1’’ for each input value of control voltage Vinvc, varied between 0V to 1.3V, which is difficult to get from the Conventional Voltage Controlled Oscillator. Input control voltage of VCO, Vinvc, is the analog voltage generated from the Loop Filter if a Voltage Controlled Oscillator circuit is used in Phase Locked Loops (PLLs) systems.

Keywords: Voltage Controlled Oscillator, Voltage Controlled Ring Oscillator, CMOS Inverters, Simple Mirror Current.
References:

Authors: G.Prasad, N.Vasantha
Paper Title: Integrating a PCI IP Core to FPGA- Design and Implementation

Abstract: High volume and high throughput rates are the need for high speed data acquisition applications. Higher efficiency and throughput is achieved by the pci bus technology. By becoming a part of the plug & play domain of the host’s operating system, no additional data transfer protocols are needed. In this paper we have used a high density field-programmable gate array (FPGA) logic along with PCI master core for high data rate data acquisition. An FPGA with embedded PCI master core serves as a programmable interface between PCI bus and a local FIFO. The application dependent controller functions as well as FIFO and PCI interfacing are handled by FPGA logic. A Linux driver was developed to interface with the core in the FPGA and achieve high bandwidth in DMA mode. This paper will first provide an overview of IP use, including the advantages and disadvantages of using IP. The use of IP will be considered from the view of satellite ground reception applications.

Keywords: Data Acquisition buses,PCI bus, DMA transactions, FIFO read out.

References:
3. Jim McManus, PCI Applications Engineer, Xilinx Inc “Using FPGA as a flexible PCI Interface Solution”.
5. David Robinson, Patrick lysaght, Gordon M cGregor and Hugh Dick “ Performance Evaluation of a Full Speed PCI Initiator and Target Subsystem using FPGAs”.
8. Haber J (2003).” Using a commercial IP core in space flight avionics. Lessons learned”.
11. S. Palanivelu, J.Shannugam Prof and Head, Division of Avionics, Madras Institute of Technology, Chrompet, Chennai “Design and Development of PCM Decommutator with PCI – Interface.”
13. On-Chip FIFO Memory Core in Volume 5: Embedded Peripherals of the Quartus II

Authors: Mohammed Arafa, Samir Shihada, Abdulla Al Madhoun
Paper Title: Mechanical Properties of Ultra High Performance Fiber Reinforced Self Compacted Concrete

Abstract: The main goal of this research is to produce Ultra High Performance Fiber Reinforced Self Compacting Concrete (UHFPFRSCC) in Gaza Strip, using materials that are available at the local markets. To meet this purpose, twelve trial mixes are used to obtain acceptable fresh and hardened properties of self-compacting concrete with a compressive strength exceeding 170 MPa. The fresh and hardened mechanical properties of UHFPFRSCC like, workability, self-compacting properties, compressive strength, split cylinder strength and flexural strength are studied. The effects of using different amounts of steel fiber and silica fume contents on these properties are also investigated.

Results show that it is possible to produce UHFPFRSCC in Gaza Strip using materials that are available at the local markets if they are carefully selected and they will achieve a minimum compressive strength of 170 MPa at 28 days. This is expected to provide the local construction industry with a feasible new type of concrete which can be used for rehabilitation and strengthening purposes.
Keywords: Ultra High Performance Concrete, Steel Fibers, Self-Compacting, V-funnel.

References:
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4. doi.org/10.1016/j.conbuildmat.2011.04.051
6. doi.org/10.1016/j.conbuildmat.2013.05.072
8. doi.org/10.1016/j.conbuildmat.2012.04.034
10. doi.org/10.1016/j.cemconcomp.2011.11.001
12. doi.org/10.1016/j.conbuildmat.2012.07.057
14. doi.org/10.1016/j.conbuildmat.2006.01.008
17. http://dx.doi.org/10.1016/j.conbuildmat.2012.07.003

Authors: Sharmila Subudhi

Paper Title: Designing a Hybrid Page Ranking Algorithm for Semantic Web Search Engine

Abstract: Web is the most important tool in now-a-days upon which people rely on to search their required information. In such a scenario it is the duty of service provider to provide proper, relevant and quality information to the internet where user can submit their query and find out the result. But it is a challenge for service provider to provide proper, relevant and quality information to the internet user by using the web page contents and hyperlink between the web pages. The next-generation Web architecture, represented by the Semantic Web, provides the layered architecture possibly allowing overcoming this limitation. Several search engines have been proposed, which allow increase in information retrieval accuracy by exploiting keywords and their relations. This paper deals with a hybrid approach of page ranking algorithm which simply based on the prediction and calculation of different numbers of back-links to a web page.

7. Keywords: Semantic web, Page rank, HITS, Search engine, Back-link predictor.

References:

Authors: Krishan Kumar Gupta, Raj Kumar, Harendra Kumar, Medha Sharma

Paper Title: Study on Effect of Surface Texture on the Performance of Hydrodynamic Journal Bearing

Abstract: The present study examines effect of surface texture on hydrodynamic journal bearing performance. The work is divided into two steps: 1. Mechanical indentation texturing technique used to incorporate the micro-dimples on bearing surface. 2. Experimentation on smooth and textured journal bearing with two oil inlet holes located at ± 90° to load line, to examine the effect of surface texture. A series of experimental results are presented, the effect of micro-dimples on pressure distribution on center plane of smooth and textured journal bearing at different loads and speeds. The Experimental results show that the pressure increases when surface texture (micro-dimples) is added on bearing surface. It is observed that with the increase of loads (200N to 800N) at constant speed and constant oil supply pressure, the percentage increase of maximum pressure (% Pmax) is more in textured journal bearing w.r.t smooth journal bearing and with the increase of speeds (1000 rpm to 3000 rpm) at constant load and constant oil supply pressure, percentage increase of maximum pressure (% Pmax) is more in textured journal bearing w.r.t smooth journal bearing.

Keywords: Journal bearing, surface texture, bearing performance, pressure distribution in journal bearing

References:


Authors: Naeem Naik, L.M R.J. Lobo

Paper Title: A Personalized Search Using User’s-Profile

Abstract: Users’ interest is an important area in the field of IR that attempts to adapt ranking algorithms so that the results returned are tuned towards the searcher's interests. In this work we use user data to build personalized ranking models in which user profiles are constructed based on the user’s tagging data over a topic space. However, instead of employing a human-generated ontology, we use novel latent topic models to determine these topics. This means that the topic space used is determined based purely on the tagging data itself and therefore does not require human involvement to determine the topics.

Our experiments show that by introducing user profiles as part of the ranking algorithm, rather than by re-ranking an existing list, we can provide personalized ranked lists of documents which improve significantly over a non-personalized baseline. Further examination shows that the performance of the personalized system is particularly good in cases where prior knowledge of the search query is limited. This is especially useful as these are the cases where we are unable to determine when same tag has totally different intention.

Keywords: image search, metadata, optimization,


Authors: Okhaihoj, Joseph Ebosejale, Oko-Oboh, Akhere Angus, Umayah, Erhiega N.

Paper Title: Single Polarized Microstrip Antenna Design for Mobile Communication Base Station

Abstract: A single linear polarized antenna array element used in telecom base station is presented. It is of a
considerable interest in broadband antenna element since it is simple to construct and also used as a low cost based station antenna designed for mobile communication system. In this paper, design and simulation was done through the use of 3D EM CST microwave studio and the results shows that high gain, low profile, wider bandwidth of operation, high isolation and low voltage standing wave ratio was achieved.

Keywords: Microstrip antenna, Mobile Communication, low profile, isolation, patch

References:

Authors: Oko-obo, Akhere Angus, Umayah, Erhiega N., Okhaihoh, Joseph Eboseotle

Paper Title: Design and Simulation of a Dual Polarized High Performance Antenna Element for Mobile Communication Base Station

Abstract: A Dual Polarized Microstrip antenna array element for mobile telecommunication base station has a good potential for low cost base station antenna design for wireless communication. The result shows that there is increase capacity, besides; fading mitigation is put to check. The use of this type of design eliminates signal transcription and result in polarization diversity and estimations.

Keywords: Dual polarized, base station, low cost, fading mitigation, polarization diversity.

References:

Authors: Amel Boughrioua

Paper Title: Analysis of L-Slot Loaded Rectangular Patch Antenna for Dual Band Operation

Abstract: In this paper, a dual-band rectangular patch antenna is analysed and the results in terms of return loss and radiation pattern are given. It is observed that various antenna parameters are obtained as a function of frequency for different value of slot length, width and feed point; it is easy to adjust the upper and the lower band by varying these different antenna parameters. In the present work variation of substrate permittivity is also studied.

Keywords: L-shaped, Slot, patch, antenna, dual band.

References:
The utility program mkfs organizes the data blocks of a file system in a linked list. Each link of the list is a disk block that contains an array of free disk block numbers, and one array entry is the number of the next block of the linked list. The file system super block contains an array that is used to cache the numbers of free disk blocks in the file system. Because of this technique, there is no need for the processor to visit disk blocks. To overcome this disadvantage we can use bitmaps. In bitmaps only one bit can be used to indicate the status of disk block. Using this technique memory space is utilized efficiently and wastage of processor time for reading one or more disk blocks in main memory is reduced.

Keywords: disk block, super block, bit map.

References:
1. The design of UNIX operating system by Maurice J. Bach

Authors: Dhanraj Katta, G.Raghotham Reddy, R. Srikanth
Paper Title: Level Set Based Image Segmentation Using Momentum and Resilient Propagation

Abstract: In this paper image segmentation problems are solved by using the level set methods. Level Set Methods are involved to optimize the contour space and cost functional is minimized. Gradient descent methods are often used to solve this optimization problem since they are very easy to implement and applicable to general non convex functional. They are, however, sensitive to local minima and often display slow convergence. Traditionally, cost functional has been modified to avoid these problems. In this paper, I propose level set based general image segmentation using momentum and resilient propagation. The proposed methods are very simple modifications of the basic method, and are directly compatible with any type of level set implementation. This approach consists of using the algorithmic core for processing images to detect parameter sensitivity is investigated.

Keywords: Active contour, gradient methods, image segmentation, level set method, optimization.

References:
3. Thord Anderson,Gunnar Lathen,Reiner lenz,and Magnus Borga,member of IEEE“Modified Gradient Search for level set Based image segmentation ”
References


30. M. W. Mustafa, R. O. Bawazir

Paper Title: Optimal Location of Facts for ATC Enhancement

Abstract: According to the changes in power structure (deregulation), competitive markets became in urgent need to have ability to satisfy the rise of energy demands. However, it is limited by the existing transmission grids; therefore, the markets pay attention to have efficient utilization of the current transmission system that comes through the Available Transfer Capability (ATC) which is computed using proposed technique named by Repeated Power Flow (RPF). In order to have improvement in ATC, Flexible AC Transmission System (FACTS) devices are used to control power flow (PF), thus improve the power profile in the transmission system. In this paper, two types of controllers are used Static Synchronous Compensator (STATCOM) and Unified Power Flow Controller (UPFC). The insertion of the controller in the power system comes through determining the particular location in the transmission system; the proposed method for optimal position is called Loss Sensitivity Index (LSI). This paper is applied on 5, 14 and 24 Bus Test Systems and simulated in Power system Analysis Toolbox (PSAT) software. The proposed methods have yielded results in improvement of ATC.

Keywords: ATC, LSI, RPF, STATCOM, UPFC.
In the present paper, the effect of the Net Positive Suction Head (NPSH) for the centrifugal pump in a simple pipeline system has been carried out eliminating water hammer. Both the experimental tests and numerical calculations were performed in this study to investigate the transient flow effects when the discharges change abruptly in the system. The phenomenon of transient flow is generally occurred when the sudden opening of the downstream valves are used in the pumping station or due to introducing additional parallel branches of pipelines that contain pumps. Experimentally, two operational tests with different NPSH were conducted to show the relations between the head (H) and discharge (Q). The results of these tests showed two different types of H-Q curves. The first test produced a flat H-Q curve when the water surface level in the suction tank was 4 m above the center line of the pump. While in the second test the operational case created a steep H-Q curve when the pump was used to lift 6 m from the suction tank. That is likely happened due to the decrease in a cut-off discharge point. The numerical calculations on hypothec simple pipeline system have been done for the transient flow after determining the shape of the H-Q characteristics curves produced from the experimental tests. The Darcy-Weisbach equation was used to calculate the friction losses and obtain the system resistance curve. The classical method of characteristics, which is based on the methodological analysis of the finite difference method, was executed to propagate the wave pressure in each cases examined. The numerical results were clearly showed that the wave pressure produced in the pipeline system with the flat H-Q curve is smaller than that produced in the pipeline with the steep H-Q curve. This means that the first case is significantly reduced the possibility of occurrence the water hammer phenomenon.

**Keywords:** Transient flow, net positive suction head, pipeline system, water hammer, centrifugal pump.

**References:**

**Authors:**
G. Naveen, P.K.S. Sarvesh, B. Rama Krishna

**Paper Title:** DTC Control Strategy for Doubly Fed Induction Machine

**Abstract:** This paper focuses the analysis on the control of doubly fed induction generator (DFIG) based high-power wind turbines when they operate under presence of voltage dips. The main objective of the control strategy proposed for doubly fed induction generator based wind turbines is to eliminate the necessity of the crowbar protection when low-depth voltage dips occur. Conventional Direct Torque Control (CDTC) suffers from some drawbacks such as high torque ripple and variable switching frequency, difficulties in torque as well as flux control at very low speed. This paper is aimed to analyze DTC principles. A direct torque control strategy that provides fast dynamic response accompanies the overall control of the wind turbine. The proposed control does not totally
eliminate the necessity of the typical crowbar protection for turbines it eliminates the activation of this protection during low depth voltage dips. The modeling of the complete system is done in MATLAB-SIMULINK. Simulation results show the proposed control strategy that mitigates the necessity of the crowbar protection during low depth voltage dips.

**Keywords:** doubly fed induction machine (DFIM), direct torque control (DTC), crowbar protection etc.

**References:**
4. Modeling and Real-Time Simulation of Non-Grid-Connected Wind Energy Conversion SystemJinqi Wang, Yundong Ma Automation Institute, NUAANanjing, Jiangsu, ChinaZurong Hu, Xing Yang, Automation Institute, NUAANanjing, Jiangsu, China.
6. Dynamic Modeling of Doubly Fed Induction Generator Wind Turbines Janaka B. Ekanayake, Senior Member, IEEE, Lee Holdsworth, XiaoGuang Wu, and Nicholas Jenkins, Senior Member, IEEE

**Authors:** Vruna A. Mahamuni, Madhuri Khambete

**Paper Title:** Background Subtraction Techniques for Moving Object Detection in Video Frames

**Abstract:** Identifying moving objects is a critical task for many computer vision applications. Background subtraction approach is used to separate the moving objects from the background. Many different methods have been proposed over the recent years. This paper provides implementation of five background subtraction techniques these are , Frame differencing, Mean, Median, Single Gaussian distribution and codebook. Implemented techniques are compared based on different parameters e.g. TP rate FP rate Precision and computation time. Such a comparison can effectively guide the designer to select the most suitable technique for a given application in a principled way.

**Keywords:** Background modeling, BGS, BG, Foreground.

**References:**
4. B. Tamersoy , "Background Subtraction – Lecture Notes" University of Texas at Austin. (September 29, 2009).

**Authors:** Balwant Kumar, N.N. Harry, Y.K. Bind, R K Pandey

**Paper Title:** Optimization of Bill of Quantities for Construction of Pre-Engineered Buildings

**Abstract:** Steel construction is considered as a process that involves many related activities. Pre-Engineered buildings steel parts are required to be installed in a specific order due to structural safety requirements and to the logical sequence of erection. Garnet shop is being constructed for the sand blasting of bogies. Sand blasting is a process for removing corrosion in iron before painting.
In Paint shop painting work in trains after blasting has been done. After painting of bogies wheels will be attached in trains in this building. Bogie shop is the biggest building of the project. It is meant for attachment of shells and shaping it into bogie and after that attachment of bogies into each other of the train. In this shop machines and tools will be fitted in trains
Shell store is constructed for the storage of shells brought here from other factories like Kapurthala. Shell means the cover part of the bogies. Transport shop is constructed for transportation purpose after complete finishing of the train. Transporting engine will come here and it will carry out the all new train from the rail coach factory.

**Keywords:** BQO, Pre-Engineered Building, Rate Analysis.

**References:**
Energy is the lifeblood of economy development around the world and global economic growth depends on adequate, reliable and affordable supplies of energy. Key foreign policy objectives, including support for democracy, trade, sustainable economic development, poverty reduction and environmental protection rely on the provision of safe, reliable and affordable energy supplies. Nigeria receives abundant solar energy that can be usefully harnessed with an annual average daily solar radiation of about 5250 Wh/m2/day. This varies between 3500 Wh/m2/day at the coastal areas and 7000 Wh/m2/day at the northern boundary. The average amount of sunshine hours all over the country is about 6.5 hours. To enhance the developmental trend there is every need to support the existing unreliable energy sector with a sustainable source of power supply. This paper shows some economic potential of renewable energy development in Nigeria. First, the lay out estimates of employment creation that renewable energy has brought and could bring to Nigeria, exploring the issue sector by sector and looking at solar, wind, mini hydro, geothermal, modern biomass, and ocean. Also, mentioning how renewable energy generation can be produced locally to generate employment. Above all, this paper lays out how renewable energy can save the government money, bring jobs to the country, create wealth, expand access to energy for the most vulnerable in poor communities, and foster national energy independence.

Keywords: Solar energy, Renewable Energy Technology (RET), Small and medium enterprises (SME), Photo Voltaic (PV),

References:

Authors: Anyaka Boniface Onyemaecchi, Okafor Charles Onyeka

Paper Title: Technical and Economic Potential of Photovoltaic Power Generation for Wealth Creation

Abstract: Smart grid is emerging power system technologies with ensured reliability, efficiency, security and interoperability. This extensive system has many features on transmission and distribution facing a lot of challenges on the constraints like integrated communication system, advance measuring and sensing system, advance control methods, advance grid components, advance interface and decision support. This paper gives about the techniques, challenges, developments on the key strategies mentioned above and based on the literary surveys made.

Keywords: Smart grid control techniques, challenges, developments, integrated communication, grid control, grid components, grid system support.

References:
3. IEEE P2030/D7.0 draft guide for Smart Grid interoperability of energy technology and information technology operation with the electric power system EPS, and end-use applications and loads, 2011.
Abstract: This paper gives a detailed account of the general features of the major desiccant regeneration techniques and configurations of the related systems; meanwhile, attention has been paid to both technological development of solar powered regenerator, which is a key component of the liquid-desiccant dehumidification system. Studies to improve the system performance have been discussed. Benefits and conditions of the use of liquid desiccant for dehumidification purposes have been stated. It is clear from the survey that the desiccant dehumidification is more energy-efficient compared with the conventional vapor compression system. Moreover, new configurations of the solar regenerator, to improve the system performance, have been demonstrated. Some new hybrid systems that greatly expand the desiccant in residential applications, as well as, effectively promoting the single system’s performance, are also introduced.

Keywords: Dehumidification, Cooling, Liquid desiccant, Solar, Regenerator

References:

40. M. Krause, W. Saman, K. Vajen, Open cycle liquid desiccant air conditioning systems-Theoretical and experimental investigations, in: 115-128
Abstract: Steel plate-girders are generally subjected to high shear and low bending moment. The flanges primarily resist the applied moment, while the web primarily resists the shear. A thin plate in shear is a simple representation of the dominant loading case in a slender web panel of the plate girder and is a combination of the principal tensile and compressive in-plane stresses. The elastic and plastic behaviour of a simply supported steel plate can be predicted using the existing design theories. This paper presents the details and results of finite element analyses (FEA) carried out for a thin square steel plate subjected to pure shear. The objective is to predict the linear elastic and nonlinear plastic behaviour of the plate using the FE analyses and compare the results of the analyses to the theoretical predictions for validation. The FEA results for the elastic critical load and the ultimate plastic load of the plate were in very good agreement with the theoretical predictions. The FE analyses also predicted correctly the elastic buckling and the plastic failure modes of the plate.

Keywords: Finite element analyses, pure shear, shear buckling, steel plate, validation.

References:

Authors: Muhammad Aslam Bhutto, Abdul Aziz Ansari, Noor Ahmed Memon

Paper Title: Prediction of Behaviour of Steel Plate Subjected to Shear

23.
Secure Image Retrieval over Untrusted Cloud Servers


Keywords: cloud computing, searchable encryption, LSH, image retrieval.

Authors: Ayad Ibrahim Abdulnsada, Aqeel N. Mohammad Ali, Zaid Ameen Abduljabbar, Haider Sh.Hashim

Paper Title: Secure Image Retrieval over Untrusted Cloud Servers


Paper: Secure Image Retrieval over Untrusted Cloud Servers

Keywords: Cloud computing, Mutual Authentication, Zero-knowledge proof, Service provider, One-time password.

References:
Abstract: Increasing application of capacitor banks on distribution networks is the direct impact of development of technology and the energy disasters that the world is encountering. To obtain these goals the resources capacity and the installation place are of a crucial importance. Line loss reduction is one of the major benefits of capacitor, amongst many others, when incorporated in the power distribution system. The quantum of the line loss reduction should be exactly known to assess the effectiveness of the distributed generation. In this paper, a new method is proposed to find the optimal and simultaneous place and capacity of these resources to reduce losses, improve voltage profile too the total loss of a practical distribution system is calculated with and without capacitor placement and an index, quantifying the total line loss reduction is proposed. To demonstrate the validity of the proposed algorithm, computer simulations are carried out on actual power network of Kerman Province, Iran and the simulation results are presented and discussed.

Keywords: Distribution systems, Loss reduction index, Capacitor placement, Discrete Particle Swarm Optimization.

References:
Abstract: In spite of the vast advancement in technology, the exposure of a primary sector like agriculture to technology is quite limited in India. With an exponential decrease in the labor availability for agriculture, a second green revolution is the order of the day. The objective of this paper is to reduce the pressure on manual labor. The system has been tested and the results have been obtained. This is done with the help of Arduino, LabVIEW and Zigbee Technology. Essential parameters of the field are sensed to have a continuous unattended supervision.

Keywords: Arduino, RST-03, Fuzzy Logic, LabVIEW, ATMEGA 328, Zigbee technology, Farm automation.

References:
10. Digital relative humidity & temperature sensor (RHT03), Maxdetect technology ltd.
12. Physical layer (PHY) and Wireless Medium Access Control (MAC) specification IEEE std. 802.15.4, 1997

Authors: Masum Billah, M L Palash, Husain Mohammad Mahbub Alam

Paper Title: Load Balanced Routing Protocols for Ad Hoc Mobile Wireless Networks

Abstract: the collections of mobile nodes which can form randomly and dynamically for temporary basis network without need preexisting network infrastructure or any centralized controlled administration that nodes can be arbitrarily located and can move freely called Mobile ad hoc network. Because of some limitation at wireless link capacities can be excessive loads on the nodes. There are two major aspects for this traffic and power consumption. So, unbalanced traffic may cause of more delay, packet dropping, and reducing packet delivery ratio. The work is the idea on view of balancing nodes on traffic in different routing protocol DSR, DSDV and AODV in a mobile ad hoc network. This analysis of this result obtained from a NS2 particular scenario.

Keywords: Ad hoc Networks, AODV, DSR, DSDV, load balancing, NS2, Routing Protocols.

References:

29.

28.

239.
An attempt has been made to develop prototype instruments with Fiber optic differential pressure sensor (FODPS) and its use for measuring Biological Oxygen Demand (BOD) in the effluent from sugar factories and distilleries. Design of fiber optic based differential pressure sensor (FODPS) using intensity modulation technique is reported in this paper. A corrugated diaphragm based differential pressure sensor with a fiber optic probe to record this deformation/displacement of the diaphragm is designed, optimized and fabricated. In FODPS, diaphragm act as a reflector. A flexible disc of plastic is used as a diaphragm to convert the measuring pressure to the deflection of this deformation/displacement of the diaphragm is designed, optimized and fabricated. In FODPS, diaphragm act as a reflector.

References:
A new control philosophy for a unified power quality conditioner (UPQC) to coordinate load reactive power sharing with the shunt inverter. The active power control approach is used to compensate voltage sag/swell and is integrated with theory of power angle control (PAC) of UPQC to coordinate the load reactive power between the two inverters. Since the series inverter simultaneously delivers active and reactive powers, this concept is named as UPQC-S (S for complex power). A detailed mathematical analysis, to extend the PAC approach for UPQC-S, is presented in this paper. MATLAB/SIMULINK-based simulation results are discussed to support the developed concept. Finally, the proposed concept is validated with a digital signal processor-based experimental study.

Keywords: UPQC, UPQC-S, UPFC, PAC

References:
Mobile Ad Hoc Networks (MANETs) are wireless networks which don’t require any infrastructure support for transferring the data packet between two nodes. Routing protocols for ad hoc networks has generally ignored channel fading. The existing protocol Channel Aware - Ad hoc On-demand Multipath Distance Vector (CA-AOMDV) uses one of the routing metrics as channel Average Non-Fading Duration (ANFD). This metric is useful for informing the fading detail into neighbour node. We propose a new Load Based Channel Aware - Ad hoc On-demand Multipath Distance Vector (LBCA-AOMDV) protocol which is applied for load balancing to improve the network performances. In our routing protocol calculates the channel’s non-fading duration for routing with minimum packet loss. Specifically, the faded paths can be reused rather than being discarded and also the loads are balanced on the link. The NS-2 was used to perform both simulation and performance evaluation of the proposed protocol and to compare it with the existing protocols. The simulation result demonstrates the greatly improved network performance and reduction of packet loss on routing over CA-AOMDV.

**Keywords:** Mobile ad hoc networks, routing protocols, channel average non-fading duration, channel average fading duration.

**References:**
Abstract: With the development of cloud computing, Data security becomes more and more important in cloud computing. This paper analyses the basic information about cloud computing and cloud computing data security issues, with the analysis of Hadoop map reduce and Merkel hash tree authentication of data elements. Finally we build a data security in real world for cloud computing Keyword-KeyWord1.

Keywords: Characteristics of Cloud storage, Security issues, Data security, Map reducing Programming Model, Avoiding Bad Hadoop and Cloud Analytics Decisions.

Smart Energy Monitoring and Control System Based on Wireless Communication

Abstract: This paper presents new design of a smart energy meter integrated with a monitoring and control system to monitor the quality of electrical power supplied to consumers and to protect them upon abnormal situations with the capability of storing all the events in real time and time as a history. This system provides several advantages for utility companies such as consumed energy, issuing the bills remotely and use multiple tariffs for billing electricity at different times during the day. Also the system offers a capability to disconnect/resume the supply for a client if the bill has not been paid after a specific time or other clients caught in electricity theft.

Keywords: Energy Meter, PIC Microcontroller, Real Time & Calendar, Smart Meter, Serial Port Interfacing.

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15. 18-pin Enhanced Flash/EEPROM Microcontroller. M. T. Inc. USA.
References:

Authors: Debabrata Swain, G.Ramkrishna, Hitesh Mahapatra, Pramoda Patro, Pravin M.Dhanrao  

Paper Title: A Novel Sorting Technique to Sort Elements in Ascending Order

Abstract: Sorting is an operation to arrange the elements of a data structure in some logical order. In our daily lives, without knowing about sorting we are doing works in sorted order. So that’s why everybody must need an efficient sorting technique which will solve sorting problem with in limited time. So We have discussed about various existing sorting algorithms with their advantage and disadvantage. In this paper, we have proposed a new sorting algorithm which overcomes some common disadvantage of some traditional existing algorithms by properly utilizing the memory. Here, we have compared our algorithm with traditional existing algorithms by using some factors.

Keywords: Various sorting algorithms. Bubble sort. Selection sort, Insertion sort and Quick sort

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11. Computer Algorithms by Ellis Horowitz, Sartaj Sahni, Sanguethevar Rajasekaran, Galgotia publications,5 Ansari road, Daryaganj, New Delhi-110002
14. Lecture Notes on Design & Analysis of Algorithms G P Raja Sekhar Department of Mathematics I I T Kharagpur
16. Let Us C by Yashvant Kanethkar, 8th edition (BPB publications),b-14 Connaught place, New Delhi-110001

Authors: Mahesh Bilagi, Manjunath Lakkanavar

Paper Title: Microcontroller Based Direct Digital Synthesizer and FSK Modulator

Abstract: Many possibilities for frequency generation are open to a designer, ranging from phase-locked-loop (PLL)-based techniques or very high-frequency synthesis, to dynamic programming of digital- analog converter (DAC) outputs to generate arbitrary waveforms at lower frequencies. But DDS’s ability to accurately produce and control waveforms of various frequencies and profiles has become a key requirement common to a number of industries. Whether providing lively sources of low phase-noise variable-frequencies with good spurious performance for communications, or simply generating a frequency stimulus in industrial or biomedical test equipment applications, convenience, compactness and low cost are important design considerations.

Keywords: DDS and Digital to analog converter

References:

Authors: Abdelelah Kidher Mahmood, Mohammed Mahmood Abdulaal

Paper Title: Neural Network Observer Based Leak Detection and Localization System for Oil Transporting Pipelines

Abstract: This paper considered with the design of two leak detection and localization systems in oil transporting pipeline. First the one based on mass balance principles and second one based on pressure gradient intersection. The main distinction of the both methods, thy have an intelligent observer structured by artificial neural network. Every system has been tested individually, and satisfactory results have been obtained with accurate and good performance. These methods collected together to work in parallel implementing a combined system, this system gives better performance and reduce the false alarm level.

Keywords: intelligent observer, LDS, leak detection and localization, leakage classifier, neural network observer, oil transporting pipeline,.

References:

Authors: Golluri Venu, G.Anitha, G.Ramchander

Paper Title: The Design of Video Surveillance System Using S3C2440 and 3G Module

Abstract: In this paper, A wireless video surveillance system based on 3G Module and ARM9 is designed. The embedded chip and the programming techniques are adopted. The central monitor which adopts S3C2440 chip as controller is the core of the whole system. First, USB camera video data are collected by the embedded Linux system, processed, compressed and transferred by the processing chip. Then, video data are sent to the monitor client by GRPS network. Tests show the presented wireless video surveillance system is reliable and stable. And it has a perfect application prospects with real-time monitor.

Keywords: Embedded Linux; S3C2440; Monitoring; GPRS

References:

Authors: T.K.Abdul Qadir, V.Venkateswarlu

Paper Title: Design and Implementation of Envelope Amplifier and Power Amplifier for Envelope Tracking in Polar Transmitters

Abstract: Envelope tracking is an amplitude modulation technique for a polar transmitter. The circuit for implementing envelope tracking technique consists of an envelope amplifier (EA) and a power amplifier (PA) whose design and implementation on Cadence Virtuoso platform is presented. The envelope amplifier amplifies the envelope signal by a gain of 2 and the power amplifier requiring a power added efficiency (PAE) of 55-60% and a peak to average ratio (PAR) of 4-6dB tracks the envelope of the transmit signal to ensure it operates linearly, i.e. the supply voltage rides above the amplitude modulated signal. The envelope and phase signals are generated from envelope and phase power supply sources available in Cadence Virtuoso. The overall system efficiency is determined by the product of the envelope amplifier efficiency and PAE of the RF power amplifier.

Keywords: Polar transmitter, envelope tracking, phase modulation, amplitude modulation, envelope amplifier and power amplifier.

References:
2. Feipeng Wang „Donald F. Kimball, Jeremy D. Popp, Annie Huieching Yang, Donald Y. Lie, Peter M. Asbeck and Lawrence E. Larson “
Abstract: Multiplication is the basic process of mathematical operations. In the vedic mathematics for this lengthy process, a simple process is used with the help of urdhva tiryakbhyam sutra. It helps to avoid small work in calculator which can be manually done easily. If a person starts using this method without sufficient practice, many a times one makes mistakes in low calculations during cross and vertical multiplication and addition at a time. To avoid these mistakes a simple matrix form representation of the multiplication can help this technique without long calculation of mistakes a simple matrix form representation of the multiplication can help this technique without long calculation of

Keywords: Matrix, Multiplication

References:
1. Vedic Mathematics by jagadguru swami sr,MOTILAL BANARSIDASS PUBLISHERS PRIVATE LIMITED,DELHI.

Authors: Abhinav Singh, Pranay Kumar, Sunil Singh

Paper Title: Vision, Principles and Impact of Reconfigurable Manufacturing System

Abstract: The current day manufacturing environment is characterized by numerous challenges and changes. A typical manufacturing company faces constantly changing product volumes and mix. It is commonly recognized that traditional manufacturing systems do not fit to present market competition and a shift is needed. A great amount of
research efforts has been put on looking for new manufacturing systems. However, many of these newly emerging approaches lack a Unified global view of manufacturing and address only some perspectives of manufacturing. The Requirements of product design in the 21st century present an ever-increasing challenge. And this Advanced Manufacturing System popularly named and known as Reconfigurable Manufacturing System can help us face and sustain this challenge. This paper shows the definition and background of Reconfigurable Manufacturing Systems. In this paper an overview of components of reconfigurable manufacturing system and comparisons of different manufacturing system with their merits and demerits are presented. The capabilities of reconfigurable manufacturing system, challenges of reconfigurable manufacturing system and key role in reconfigurable manufacturing system are explained. The characteristic of reconfigurable manufacturing system are also presented in this paper.

Keywords: Unified Global View

References:

Authors: Abdolhamid Rahideh, Mohsen Gitzadzeh, Sirus Mohammadi

Paper Title: A Fault Location Technique for Transmission Lines Using Phasor Measurements

Abstract: This paper presents a fault location technique for two-terminal multisection compound transmission lines, which combine overhead lines with underground power cables, using synchronized phasor measurements acquired by global positioning system (GPS) based phasor measurement units (PMUs) or digital relays with embedded PMU or by fault-on relay data synchronization algorithms. The technique is extended from a two-terminal fault location method with synchronized phasormeasurements as inputs. A novel fault section selector is proposed to select the fault line section in advance. The proposed technique has the ability to locate a fault no matter where the fault is on overhead line or underground power cable. The adopted technique has a solid theoretical foundation and is direct and simple in terms of computational complexity. Both extensive simulation results and field test results are presented to demonstrate the effectiveness of the proposed scheme. The proposed technique has already been implemented in the Taiwan power system since the year 2008. Up to the present, the proposed technique yields excellent performance in practice.

Keywords: Fault location, phasor measurement units (PMUs), two-terminal compound transmission lines.

References:
Flares can be detected. These flares are becoming common to share in digital communication. We all are very used to hearing about the coming solar storm. This event is a reminder that we need to be prepared for the potential impact of solar storms. Solar storms can cause disruptions in various aspects of our lives, including telecommunications, power grids, and transportation systems. The strength of the received signal changes according to the distance between the source and the receiver. This change can be observed using Very Low Frequency (VLF) radio transmissions as they bounce off Earth's ionosphere. The power grids can be saved by disconnecting them from the supply and transformers. This will require an accurate forecast of the solar storm impact.

Abstract:

Solar Activity Monitoring Through Real Time Recording of VLF Wave Amplitude

In its latest findings, NASA has come up with a prediction of a massive solar storm (flare) that can hit Earth anytime in 2012-13. Right from GPS systems, credit card transactions, mobile phone services, communication services, radio and air travel to smart power grids and electrical transformers, all are vulnerable to the solar storm. The damage can be controlled by putting satellites in a safe mode. The power grids can be saved by disconnecting them from the supply and transformers. This will require an accurate forecasting about the coming solar storm. This project is designed to monitor solar flares on Earth by tracking changes in Very Low Frequency (VLF) radio transmissions as they bounce off Earth’s ionosphere. The strength of the received signal changes according to the extent of ionization in the ionosphere. Thus, by monitoring the amplitude of VLF signals, the appearance of solar flares can be detected.

Keywords: Radio SkyPipe, Solar Flare, Sound Card, Very Low Frequency

References:


Authors:

A.S.Rajagopalen, B.K.Darshan, G.Murugan

Paper Title:

Solar Activity Monitoring Through Real Time Recording of VLF Wave Amplitude

Abstract:

Solar Activity Monitoring Through Real Time Recording of VLF Wave Amplitude

In its latest findings, NASA has come up with a prediction of a massive solar storm (flare) that can hit Earth anytime in 2012-13. Right from GPS systems, credit card transactions, mobile phone services, communication services, radio and air travel to smart power grids and electrical transformers, all are vulnerable to the solar storm. The damage can be controlled by putting satellites in a safe mode. The power grids can be saved by disconnecting them from the supply and transformers. This will require an accurate forecasting about the coming solar storm. This project is designed to monitor solar flares on Earth by tracking changes in Very Low Frequency (VLF) radio transmissions as they bounce off Earth’s ionosphere. The strength of the received signal changes according to the extent of ionization in the ionosphere. Thus, by monitoring the amplitude of VLF signals, the appearance of solar flares can be detected.

Keywords: Radio SkyPipe, Solar Flare, Sound Card, Very Low Frequency

References:

Vehicle detection plays an important role in the traffic control at signalized intersections. One of the Advanced Event Assistance systems is being researched nowadays for Intelligent Vehicles has to deal with the detection and tracking of other vehicles. The present system to detect and track moving vehicles based on detectors and classifiers. In previous approach escapes some of the existing frameworks for detection vehicles in traffic monitoring systems. Moving vehicles detection based on the pixelwise classification in both detectors and classifiers using multilayer perceptrons and Dynamic bayesian network. Pixel wise classification provides not only region wise but also sliding window also detected the vehicles. The feature extraction performed in both training and detection stages. In the classification used dynamic Bayesian networks and in this network vehicle and non vehicle are identification purpose use a support vector machine. The classification of vehicles and non vehicles are identification purpose used a color histogram algorithm. In this framework used two detectors and two classifiers. Two detectors for local feature extraction are Harris corner detector and canny edge detector. Then, two classifiers of color feature extraction, SVM and multilayer perceptrons are introduced. Both of them have good performance on vehicle color classification but we choose SVM for color feature extraction in our system. Finally, the training process and classification process of dynamic Bayesian network are utilized. In experimental results are shown in different videos are taken at different cameras and different heights in surveillance systems.

Keywords: Aerial surveillance, Canny edge detection, Dynamic Bayesian Networks, Multilayer Perceptrons Soft Computing, Vehicle Detection.

References:
1. Hsu-yung cheng, Chih-chia weng and yi-ying Chen,” vehicle detection in aerial surveillance using dynamic Bayesian Networks”, IEEE April-2012, vol.21, no.4.
functional objectives for a chemical plant. Once these two important factors are achieved, the next goal is to make the plant more profitable. Given the fact the conditions which affect the operation of the plant do not remain the same, it is clear that it is mandatory that the operation of the plant is changed in order to maximize the economic objective. This task is undertaken by the controllers of the plant. These controllers are the subject of interest in this paper, where a chemical process like a stirred tank heater is controlled using the PID, the IMC based PID and the adaptive controller. A mathematical model of the stirred tank heater is developed and the different control mechanisms are applied to it. A simulation study is carried out using MATLAB to control the process system using the above mentioned control techniques. With the help of the simulation studies and the time integral performance criteria, we can deduce which controller is the most suitable for a stirred tank heater system

Keywords: Adaptive Control, IMC based PID Control, PID Control, Stirred Tank Heater

References:

Authors: Pradip Ramdas Bodade, Dinesh Kumar Koli

Paper Title: Experimental Investigation on Convective Heat Transfer Analysis in a Circular Tube with Internal Threads of Different Pitches

Abstract: The present work focus on Experimental investigation of heat transfer and friction factor characteristics of horizontal circular pipe using internal threads of pitch 1 cm and 0.5 cm with air as the working fluid. The flow regime is selected for this study with the Reynolds number range 17,000 to 30,000. The horizontal aluminum pipe was subjected to constant and uniform heat flux. The experimental data obtained were compared with those obtained from plain Horizontal pipe. The effects of internal threads of varying pitch on heat transfer and friction factor were presented. Based on the same pumping power consumption, the pipe with internal threads possesses the highest performance factors for turbulent flow. The heat transfer coefficient enhancement for internal threads is higher than that for plain pipe for a given Reynolds number. The use of internal threads improved the performance of horizontal circular pipe.

Keywords: Enhancement, internal threads, heat transfer and turbulent flow.

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1. S. Naga Srinivasarao, P.V.V. Satyanarayana, N. Pradeep, N. Sai Chaitanya Varma
2. P.V.V. Satyanarayana, N. Pradeep, N. Sai Chaitanya Varma

Paper Title: A Study on the Performance of Pond Ash In Place of Sand and Red Soil as A Subgrade and Fill Material

Abstract: Industrial wastes have been gaining importance as a geotechnical material in the present days. Due to specific advantages, materials like flyash, pond ash have been considered as a replacement to natural soils. In this an attempt is made to study pond ash as a geotechnical material. To study pond ash as a geotechnical material for sub-grade and fill material, tests like gradation, compaction, CBR, strength and seepage parameters etc., have been conducted on the sample and compared with sand particles. From the test results it is identified that pond ash can withstand high strength by varying moisture contents, good drainage characteristics and incompressible nature like

Authors: P.V.V. Satyanarayana, N. Pradeep, N. Sai Chaitanya Varma

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sand particles

Keywords: Crusher dust, Sand, Red soil, Angle of shearing resistance, CBR.

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9. IS 2720 : Part 17 : 1986 Methods of Test for Soils - Part 17 : Laboratory Determination of Permeability

Authors: Jassam Gzar Lafta, Hussein Shaheed Fadhil, Ameer Abass Hussein

Paper Title: Heavy Metals Distribution and the Variation of Soil Properties around Alqaim Cement Factory in Anbar Governorate - Iraq

Abstract: Soil samples collected in June 2012 (24 samples random for ( 0 – 30 cm ) depth). It is worth mentioned that the sampling were undertaken in the direction of the prevailing wind direction away from the vicinity of cement fabric. Soil samples were air dried and sieved through 2mm analyzed for their some chemical and physical properties as well as their total heavy metals content. The results indicated that the soils of the studied area are calcareous in nature having ( 23% - 37.6% ) sandy clay loam to sandy loam in CaCo2 texture and moderately to slightly alkaline with mean (PH 8.7) especially in the surface soil samples taken near the cement factory. The soils were heavily contaminated with Cd and Co and Ni for the level of (WHO) while it was non polluted with other heavy metals. The most contaminated sites area found within the (0 to 3km) of the cement factory.

Keywords: Heavy metals distribution, Soil properties, Cement factory, Alqaim (Anbar)

References:

Authors: Zuhair Abdul Wahab Al-Jawahry

Paper Title: Building a Digital Elevation Model for Razaza Lake by Using GIS

Abstract: The research involves getting aid from NASA through downloading the data relevant to the area under study. The research involves getting aid from NASA through downloading the data relevant to the area under study. To accomplish this, the research involves getting aid from NASA through downloading the data relevant to the area under study.
study and inferring the coordinates after several modifications on them have been carried out, using specialized programs.

Razaza Lake (in Iraq) has been selected in order to reach several details such as the number islands in the lake, terrain survey, lake boundaries and nature of the land bordering it, the lake water level at the time the radar readings are taken when the lake surface area is calculated. and also find: - Radar readings are not useful for areas submerged in water. The lowest and highest elevations of the area under study are 19 and 159m respectively. The surrounding areas are inclined gradually towards the Lake, except those on the south east (which are located in Kerbala province, which are characterized by sharp rise whose elevation reaches 100 m. It is easy to plan for making roads and for urban housing projects through visual inspection of area solid model

Keywords:
Radar readings are not useful for areas submerged in water

References:
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17. DA Douglass & Ridley Trash “Sag and Tension of conductor” 2013

Authors:
Biswajit Ghosh

Paper Title:
Investigating the Rate of a Chemical Reaction by Sensing Mechanism

Abstract:
The paper investigates the rate of a chemical reaction by sensing mechanism i.e, use of a chemical sensor. The sensing element is a fiber. A chemical solution is taken. A portion of the fiber (uncladded region) is dipped in the solution for sensing the progress of the reaction. The rate of a chemical reaction can be calculated by measuring the speed at which products are formed. This can be estimated by the absorbance of lightwave as the
reaction speeds up. From the curve of absorbance rate against time we can calculate the reaction rate by finding the slope.

**Keywords:** sensor technology; chemical concentration; multimode fiber; slope of the curve.

**References:**

**Authors:** A. Faize, A. Driouach, A. Kaabal, G. A. Alsharafi, A. M. Qasem

**Paper Title:** MOM Application for Calculating the RCS Dielectrics and Arbitrary Two-Dimensional Geometric Shape Formulation of Integral Equations Cylindrical Dielectric

**Abstract:** This work focuses on the study of the dispersion of electromagnetic waves caused by two-dimensional structures: it is to develop a numerical code called TMHD, which is based on the method of moments (MoM), to calculate the Radar Cross Section (RCS or SER) of arbitrary two-dimensional geometry structures. Examples: homogeneous dielectric cylinder circular and square.

**Keywords:** MoM method, RCS dielectrics, cylindrical dielectric.

**References:**

**Authors:** Assawari Dudwadkar, Akhil Gore, Tushar Nachnani, Harshil Sahbhani

**Paper Title:** Near Field Communication in Mobile Phones

**Abstract:** The electronics and telecommunications industry has experienced rapid advances over the past decade. This has led to a new paradigm in the field of data transfer and wireless communication. This brings us to the current revolution the mobile industry faces in the form of NFC technology. Near Field Communication technology (NFC) is a standard for very short range communication up to a few centimetres. It finds various applications ranging from data transfer, secure identification, payments, marketing, healthcare, aviation, hospitality. NFC works at a very short range, mostly by touching the devices that employ NFC. This makes NFC a very easy and viable technology to use.

**Keywords:** Smartphone, NFC, NFC tags, NFC reader.

**References:**
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Authors: M.N. Akhtar, J.N. Akhtar, O. Hattamleh

Paper Title: The Study of Fibre Reinforced Fly Ash Lime Stone Dust Bricks With Glass Powder

Abstract: In the present study, fly ash was used as a raw material for replacing clay for making Fly ash reinforced bricks. The effect of fly ash with high replacement, and different properties of bricks combination were studied. It was found that the compressive strength of Plain Fly Ash and Treated Fly Ash Bricks (FAB, FALB) increases linearly and maximum with 5% coarse sand and 15% sand combination at 10% cement. This increase of compressive strength continues with the addition of 0.25% Plastic fibre in FAB and FALB. However, in the combination of Fly Ash lime stone dust glass powder Brick (FALSDGBP) with and without Plastic fibre the strength achieved to be maximum at 25% stone dust and 25% sand replacement. At the most, the combination of Fibre reinforced Fly Ash lime stone Dust glass powder Brick (25FRFALSDBGPB) found to be highest compressive strength with 25% stone dust and sand combination at 10% cement. The strength achieved was nearly close to Indian First class Brick.

Keywords: Brick, compressive strength, Fly ash, Lime.

References:
6. LS. 3812, Specification for Fly ash as pozzolana and admixture (First Revision) 1983.
7. I.S. 8112-43 Grade ordinary Portland cement specification (First Revision) 1989.

Authors: S.K. Bisoi, G. Devi

Paper Title: Multi-Input Multi-Pseudo Floating Gates Used In Circuits

Abstract: Multi Pseudo floating gates with multi-inputs are used in circuits. The main operation of pseudofloating gates is bidirectional property by control gates.

Keywords: The main operation of pseudofloating gates is bidirectional

References:

Authors:  M Madhavi, M V R Srivatsava
Paper Title:  Fraud Detection in Banking
Abstract:  As a customer we may face the potential target for fraudulent activities. In the present scenario the customer is the prime victim of all the fraudulent activities that drag him to a great lose. Due to unpredictable nature of mankind, would eventually lead to manipulation of any transactions or they may lead to theft of details. This survey paper deals with the different types of techniques that help to find the fraudulent activities in the banking sector.

Keywords:  Electronic fraud, Identity theft, Credit/Debit card fraud, Data mining techniques
References:  
1. In the context of this paper “Fraud Detection in Banking Using Data Mining – Neural Networks” the references include
3. Data Mining: Concepts and Techniques Jiawei Han and Micheline Kamber. (References)

Authors:  Sharad R. Mahajan
Paper Title:  Goals and problems in Active Noise and Vibration Control
Abstract:  Noise and vibrations have over the last two decades been regarded as important environmental health problems. Regulations regarding acoustic as well as vibration levels have therefore become more strict. High levels of sound and vibration in different means for personal transportation are often regarded as an important environmental problem. The public alertness of health risks in conjunction with sound and vibration exposure has indirectly, become an important sales argument for manufacturers. Governments and health organizations are already regulating the time and level of sound and vibration that the human body is allowed to be exposed to. These regulations are becoming more and more strict, wherefore new methods for sound and vibration attenuation always are in demand. The new directives from the European Union (EU), from 2005, regarding heavy vehicles (loaders, trucks etc.) constitute an example. Such regulations state that it is not the manufacturer of the heavy vehicle but the employer who has to ensure that the maximum sound and vibration limits, both on a daily and weekly basis, are not exceeded.

Keywords:  Active Noise, Vibrations, Damping materials, Traffic noise, Surface pavement
References:  
5. Presented by Guohua Sun University of Cincinnati engineering, Aug. 19-22 INTER-NOISE, the 41st International Congress and exposition on Noise Control Engineering, paper title “Modified Filtered-x LMS Algorithm for Active Control of Vehicle Road Impact Noise,” and co-authors are Mingfeng Li, research associate in UC’s College of Engineering and Applied Science (CEAS), and Teik C. Lim, Herman Schneider professor of mechanical engineering.
6. Automotive Noise Control: Thirty Years of Changing Perspectives, Jim Thompson, National Institute for Occupational Safety and Health

Authors:  Sagar V. Wankhede, Samir L. Shinde, Amit R. Wasnik
Paper Title:  Modelling of Cu-Al2O3 Metal Matrix Composite Prepared By Powder Metallurgy Route
Abstract:  In recent development of Copper-Alumina metal matrix composites, the applications which need the materials with high thermal and electrical conductivity are attracting researchers interest. Copper matrix was reinforced with Al2O3 particles with varying amounts of Al2O3 by weight were prepared by powder metallurgy (PM) route having size less than 10µm. Copper powder which is electrolytic and atomized of size 45µm are used to fabricate the MMC’s. The powder is blended and compacted at optimized load of 350, 400 & 450MPa to produce green compacts of h/d ratio in the range 1.1 to 1.5 and sintered in hydrogen reducing atmosphere at temperature of 8000C for 1 hour. and then furnace cooled to room temperature. Wear behaviour of the composite will investigated on a pin-on-disc machine to find out effects of hardness on the composites which prepared by varying the amount of alumina in copper matrix and compare it with the previous work on the composites.

Keywords:  Al2O3, MMC’s, 350, 400 & 450MPa
References:  
1. A. Bakkar and V. Neubert of Department of Metallurgy and Materials Engineering, Suez Canal University, P.O. Box 43721, Suez.
Abstract: Though there have been numerous studies on the effect of nitrogen (N) fertilization on soybean [Glycine max (L.) Merr.], relatively few have investigated early season N application in the environment of the northern of Iran. The objective of this research was to investigate the impact of starter N fertilization on soybean yield and quality. To achieve this objective a field experiment was established, using a split-plot design with three replications. Whole plots were tillage [no-tillage (NT) and conventional tillage (CT)] with starter fertilizer rate as the split plot treatments. Nitrogen was band applied at planting as urea (UR), at rates to supply 0, 16, 32 and 64 kg N/ha. As a result yields were greater for the CT than NT, possibly due to more favorable environmental conditions. Analysis of the experiment showed an average yield increase of 16.4% and 12.2% for the 32 kg N/ha rate, compared to the no N treatment in CT and N, with no difference in grain N or oil concentration. This research demonstrates that applying N as starter has the potential to increase soybean yield but this may or may not translate into improved grain quality in the unique environments of the northern of Iran.

Keywords: Soybean-Nitrogen-Starter-Yield

References:
20. U. Rajji, and G.Donald, Growth analysis soybean under no tillage and conventional tillage systems (University of Illinois, 2003)
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scheme. In this method, inter-cluster interference free communications have been organized. To do this assignment, the proposed algorithm which we name CDMLA, uses learning automata concept. The proposed algorithm allocates interference free code to each cluster head with concept of code spatial reuse. This algorithm is performed based on clustering and a learning automaton is assigned to each cluster head. The learning automata residing in each cluster head allocates a code to its cluster head. We have implemented the system in network simulator GloMoSim. Also, we have rigorously evaluated the performance of our proposed solution by performing a variety of experiments through the extensive simulation experiments. The performance of proposed algorithm is measured, and the results are compared with CS-DCA, LACAA and Hybrid-DCA protocols in terms of the number of used codes, code spatial reuse, blocking rate, waiting time for packet transmission and throughput. Simulation results show that the proposed method outperforms the existing methods in terms of almost metrics of interest under the same conditions.

Keywords: CDMA, Code assignment Algorithms, Mobile ad-hoc networks, GloMoSim.

References:


Paper Title: A Compact Fractal Based Printed Monopole Antenna for WiBro, WiMax and UWB Applications

Abstract: In this paper a compact Koch fractal based printed monopole antenna has been introduced as a candidate for use in applications in which the WiBro, WiMax, ISM and UWB services are integrated. The monopole radiating element has a rectangular shape with two slots cut from each corner. In addition, the sides of the radiator, except that of the feed line direction, have been modified to be in the form of Koch fractal curve of third iteration. A small rectangular slot has been made in the ground plane beneath the radiator element. The proposed antenna have been carried out using a method of finite integration technique (FIT) based EM simulator, CST Microwave Studio. Simulation results show that the proposed antenna offers an impedance bandwidth, for return loss ≤−10 dB in the range of 2.3 – 11.5 GHz. Furthermore, the proposed antenna radiating element has a compact size of 20 x 20 mm².

Keywords: Compact fractal antenna, Microstrip transmission line, Printed monopole antenna, Wireless applications.

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Paper Title: A Compact Fractal Based Printed Monopole Antenna for WiBro, WiMax and UWB Applications

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Keywords: Compact fractal antenna, Microstrip transmission line, Printed monopole antenna, Wireless applications.

References:
Abstract: The theory of network coding promises significant benefits in network performance, especially in lossy networks and in multicast and multipath scenarios. To realize these benefits in practice, we need to understand how coding across packets interacts with the acknowledgment (ACK)-based flow control mechanism that forms a central part of today’s Internet protocols such as transmission control protocol (TCP). The mechanism for TCP/NC that incorporates network coding into TCP with only minor changes to the protocol stack, thereby allowing incremental deployment, how the source transmits linear combinations of packet ACKs the sink acknowledges every degree of freedom even if it essentially masks losses from the congestion control algorithm and allows TCP/NC to react smoothly to losses, resulting in novel and effective approaches for congestion control over lossy networks such as wireless networks.

Keywords: AES, ACO, Butterfly Network, TCP/NC

References:


Authors: Ashvini Jadhav, Shrinivas Gadage

Paper Title: To Find Solution for Secure and Fast Data transfer: Improving Network Performance

Abstract: The theory of network coding promises significant benefits in network performance, especially in lossy networks and in multicast and multipath scenarios. To realize these benefits in practice, we need to understand how coding across packets interacts with the acknowledgment (ACK)-based flow control mechanism that forms a central part of today’s Internet protocols such as transmission control protocol (TCP). The mechanism for TCP/NC that incorporates network coding into TCP with only minor changes to the protocol stack, thereby allowing incremental deployment, how the source transmits linear combinations of packet ACKs the sink acknowledges every degree of freedom even if it essentially masks losses from the congestion control algorithm and allows TCP/NC to react smoothly to losses, resulting in novel and effective approaches for congestion control over lossy networks such as wireless networks.

Keywords: AES, ACO, Butterfly Network, TCP/NC

References:

Abstract: In this paper, we present image steganography based on entropy thresholding scheme via digital images that contains redundant information can be used as covers or carrier to hide secrete message. After embedding a secrete message into the cover image so called stego image is obtained. We introduce a new forensic tool that can reliably detect distortion due to steganography and watermarking and modify those images that were originally stored in the JPEG format. Due to JPEG compression we get unique fingerprints and used as a “fragile watermark” enabling us to detect changes as small as modifying the LSB of one randomly chosen pixel. The detection of changes is based on investigating the compatibility of 8x8 blocks of pixels with JPEG compression with a given quantization matrix. The use of local criteria to choose where to hide data can potentially cause de-synchronization of the encoder and decoder. This synchronization problem is solved by the use of powerful, but simple-to-implement, erasures and errors correcting codes, which also provide robustness against a variety of attacks. 

The proposed system is used to hides large volume of data in an image as well as it will limit the perceivable distortion that might occur in an image while processing it. This project has an advantage over other information security software because the hidden text is in the form of images, which are not obvious text information carriers. The main advantage of this project is a simple, powerful and user-friendly GUI that plays a very large role in the success of the application.

Keywords: Steganography, data hiding, jpeg, DCT

References:
2. Omid Zanganeh, “Image Steganography Based on Adaptive Optimal Embedding”, Faculty of Computer Science and Information Systems University Technology Malaysia Johor, Malaysia.2009 Pg. No. 608-605

Keywords: Steganography, data hiding, jpeg, DCT

Authors: B.S.Patil, A.H.Karode, S.R.Suralkar

Paper Title: Image Steganography Based on Entropy Thresholding Scheme

Abstract: In this paper, we present image steganography based on entropy thresholding scheme via digital images that contains redundant information can be used as covers or carrier to hide secrete message. After embedding a secrete message into the cover image so called stego image is obtained. We introduce a new forensic tool that can reliably detect distortion due to steganography and watermarking and modify those images that were originally stored in the JPEG format. Due to JPEG compression we get unique fingerprints and used as a “fragile watermark” enabling us to detect changes as small as modifying the LSB of one randomly chosen pixel. The detection of changes is based on investigating the compatibility of 8x8 blocks of pixels with JPEG compression with a given quantization matrix. The use of local criteria to choose where to hide data can potentially cause de-synchronization of the encoder and decoder. This synchronization problem is solved by the use of powerful, but simple-to-implement, erasures and errors correcting codes, which also provide robustness against a variety of attacks. 

The proposed system is used to hides large volume of data in an image as well as it will limit the perceivable distortion that might occur in an image while processing it. This project has an advantage over other information security software because the hidden text is in the form of images, which are not obvious text information carriers. The main advantage of this project is a simple, powerful and user-friendly GUI that plays a very large role in the success of the application.

Keywords: Steganography, data hiding, jpeg, DCT

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2. Omid Zanganeh, “Image Steganography Based on Adaptive Optimal Embedding”, Faculty of Computer Science and Information Systems University Technology Malaysia Johor, Malaysia.2009 Pg. No. 608-605

Keywords: Steganography, data hiding, jpeg, DCT

Authors: D.Phan Kumar, G.Rosline Nesakumari, S.Maruthu Perumal

Paper Title: Contrast Based Color Watermarking using Lagrange Polynomials Interpolation in Wavelet Domain

Abstract: Vigorous watermarking with unconscious detection is necessary to realistic copyright protection of digital images. Digital watermarking includes a number of approaches that are used to undetectably communicate the information by embedding it into the original data. The proposed robust and blind color based watermarking scheme is embeds color watermarks in color images using Langrage Polynomial Interpolation (LPI) in wavelet domain. Successful development of uniqueness of proposed method helps to develop a watermarking scheme that fulfills the requirement. The proposed watermarking technique embeds only the watermark key in the diagonal part of the image. The watermark is a color logo and it not going to embed into the image. Only a tiny quantity of information is required to extract the watermark key. From the watermark key easily can retrieved original color watermark from the watermarked image. The watermark key was generated by using chaotic mapping technique. Experimental results show that the proposed watermarking scheme is computationally uncomplicated and fairly robust and good quality image

Keywords: chaotic mapping, wavelet, watermark key, Langrage Polynomial Interpolation (LPI)
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Authors: Pradnya A. Shirsath, Vijay Kumar Verma

Paper Title: Mining Frequent Pattern Form Large Dynamic Database with Time Granularities to Improve Efficiency

Abstract: Incremental algorithms can manipulate the results of earlier mining to derive the final mining output in various businesses [1, 2, 3]. This study proposes a new algorithm, called the new approach for efficiently incrementally mining frequent pattern from large dynamic database. Proposed approach is a backward method that only requires scanning incremental database. Rather than rescan the original database for some incremental generated frequent itemsets in the incremental database, we add the occurrence counts of newly generated frequent itemsets and delete infrequent itemsets obviously. Thus, new proposed approach need not rescan the original database and to discover newly generated frequent itemsets. Proposed approach generates fewer candidates, reduces complex calculation and has good scalability as compared to the previous methods.

Keywords: Thus, new proposed approach need not rescan the original database and to discover newly generated frequent itemsets.

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Authors: Ahmed Gamal Aly, Nevine Makram labib
Paper Title: Proposed Model of GIS - Based Cloud Computing Architecture for Emergency System
Abstract: Recent emergency situations in the world display the inclination that the occurrence frequency of natural catastrophes is anticipated to increase in future. Thus new approaches for crisis administration need to be elaborated based on the newest IT expansion. Cloud computing is advised as possible way to smaller the cost and complexity of computing by supplying applications that run on the Internet. This paper discus proposed GIS-model based Cloud computing for emergency management. GIS application has been implemented for earthquakes prediction and earthquakes emergency management based Cloud computing platform (Microsoft Windows Azure). Performance of GIS application has been measured in different platform one of them based on Cloud technology and the other local host.
Keywords: cloud computing, emergency management, GIS, Windows azure.
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Authors: Digambar Y. Yedage, Anand Bone
Paper Title: Efficient Software Architecture through Prototyping Approach
Abstract: Most of the software industries are focusing on the saving cost in the area of the development and maintenance of the project. The focus is on analysis of JSP, Struts, Spring MVC and Hibernate frameworks for development of the application and the prototype. As per the customers requirement developers has to perform the development task within specified time. Once the software project requirements are clear from the customer, the requirement analysis phase is carried out before the start of the design. In the design phase, the developer is not aware of what are the technologies getting involved. Before starting of the actual development phase, customer wants to see the prototype of an application. This needs to be showcased as the prototype of the application. The prototype development is the predevelopment phase which is an important phase in the software development life cycle. The customer will approve the prototype and then actual development will start. This is the most efficient way of developing the software architecture.
Keywords: Prototype, Efficient software architecture, Software Architecture, JSP Custom tag and Hibernate.
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2. Transforming Embedded Java Code into Custom Tags, Shannon Xu and Thomas Dean, 2012
11. B. Basham et al. “When even JSTL is not enough” in Head First Servlets and JSP. O’Reilly Media, 2004, pp. 489-547
Paper Title: Mining Functional Dependency from Relational Databases by Removing Redundant Candidates

Abstract: Discovery of functional dependencies from relational data base has been identified as an important database analysis technique. In this paper, we present a new approach for finding functional dependencies from large databases, based on partitioning the set of rows with respect to their attribute values. The discovery of functional dependencies is easy and efficient due to use of partitions, and the wrong or exceptional rows can be recognized easily. By using this we can eliminate equivalence attribute and redundant dependency. For standard databases the running times are better by several orders of degree over previously published results. The proposed algorithm is also works well for larger datasets than the previous methods.

Keywords: Functional dependencies, closure of set, redundancy, normalization

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Paper Title: Absorbance Measurement of Dilute Chemical Solutions

Abstract: Within the past few years a number of different designs of photoelectric calorimeters have been described in the literature. This paper addresses the absorbance measurement of visible light through different sample solutions at different range of wavelengths by using different colour filter and the results have been compared with the absorbance values obtained by a digital colorimeter. The Absorbance measurement has then been shown on an 16x2 LCD display by use of a PIC16F877a microcontroller.

Keywords: LED, LDR, colorimeter, absorbance, filter, wavelength, LCD, Microcontroller.

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Paper Title: Minimization of Delamination Factor in Drilling Of Reinforced Carbon-Carbon (RCC) Composite Material by Applying Taguchi Method

Abstract: Nowadays, The Reinforced Carbon-Carbon (RCC) Composite material is gaining significant place among the various engineering materials. The light weight and high strength composite is finding its way in recent advanced applications like Medical, Space, Defence and Bio related fields. The growing use of this composite in these advanced industries has created inquisitiveness among researchers and prompted them to study about developing technology for machining of these composites, especially with respect to the drilling operation. Drilling is the most frequently used material removal process and the production of a good quality hole will enhance the quality of the final product. The quality of hole of a composite depends on delamination mechanism and the increase in delamination factor reduces the quality of the product. This paper presents the application of Taguchi method to determine the suitable values of drilling parameters of RCC for the minimization of delamination factor. Taguchi technique emphasizes the importance of investigating the response characteristic variation using S/N ratio, resulting minimization of variation in quality characteristic due to uncontrollable parameters. High Speed Steel tool is used for drilling the work piece material, i.e. RCC composite on a CNC machine.
Keywords: Carbon-Carbon composites, RCC, CFRC, S/N ratio, Drilling operation, Orthogonal Array, Design of experiments.

References:

Authors: P.H.V.Sesha Talpa Sai, J.V.Ramana Rao, Devarayapalli K.C., K.V.Sharma

Paper Title: Preparation and Characterization of TiO2-SiO2 Sol-Gel Anti Reflection Coatings on Multi Crystalline Silicon Solar Cell

Abstract: Nano scale TiO2 and TiO2–SiO2 mixed solutions have been prepared using sol-gel process and are deposited on multi crystalline silicon solar cell by spray process. Subsequent annealing is carried out to obtain amorphous crystalline structure of TiO2 and to form crack free and homogeneous coating of TiO2–SiO2 mixed layer. The coated cells are characterized by scanning electron microscopy (SEM), Fourier transform infrared (FTIR) spectroscopy and Energy dispersive X-ray Spectroscopy (EDS). Electrical parameters are estimated to observe the enhancement of conversion efficiencies of the coated cells. Results obtained shows that the cell coated with mixed solution of TiO2–SiO2 gives better performance than the cell coated with TiO2 solution. It is due to the introduction of SiO2 particles during the synthesis of TiO2 which enhances the optical and electrical properties of the thin film coat of the compound solution. Subsequent annealing after the coatings helps in forming homogeneous layer with reduced cracks on the surface and increased conversion efficiency of the multi crystalline silicon solar cell.

Keywords: Multi crystalline silicon solar cell, Sol-Gel, TiO2, TiO2–SiO2

References:

Authors: Nikita Bhatia, Richa Srivastava

Paper Title: Two Tier Data Compression Method for Real-Time Databases

Abstract: Modern day applications handle large volumes of data. These applications involve real-time data manipulations to be carried within time constraints. So real-time databases are used in most of the real-time applications. For efficient utilisation of database, with no compromise on speed, various compression methods are used to compress the data in a real-time database. In this paper, we propose a two-stage compression process. This
process uses two algorithms- Swinging Door algorithm and LZSH algorithm. The survey indicates that this two stage compression results in highly compressed data. The compression time is always less than the database computational time.

Keywords: Real-time database, Data Compression, Swinging Door algorithm, LZSH algorithm.

References:

Authors: Dharmendra Patidar, Nitin Jain

Paper Title: Classification of Image by Combining Wavelet Transform and Neural Network

Abstract: Image classification plays an important role in many tasks, which is still a challenging problem in organizing a large image database. However, an effective method for such an objective is still under investigation. In this paper, we propose a supervised method for image classification based on combination of wavelet transform and Neural Network (NN). Neural network has been increasingly used in image classification in the last few decades. The proposed scheme for successful classification is combination of a wavelet domain feature extractor and back propagation neural networks (BPNN) classifier. For achieving a suitable way for classification of image here we first use wavelet transform. In present day wavelet transform is most popular and widely used method for image classification. Wavelet transform is a well-known tool for signal/image analysis. It provides a time–frequency representation of the data as well. Wavelet transform first takes image from given data base, analyze this image and decompose main image into sub image and gives information about texture and shape from given image. In this proposed method of image classification first we divide all given image into six parts. For obtaining the necessary and required information from each part of the given divided image we use first order color movements and daubechies4 (db4) types of wavelet transform. This proposed method for classification of image is fully based on back propagation. Information about the color movement is used as a first input for NN. Second input is a daubechies4 transform of wavelet is used for NN. Final step of classification is based on back propagation neural network (BPNN) with one hidden layer. Back propagation, an abbreviation for “backward propagation of errors”, is a common method of training artificial neural networks. Backpropagation is based on weight of input and output neurons. In neuroscience and computer science, synaptic Weight refers to the strength or amplitude of a connection between two nodes, corresponding in biology to the amount of influence the firing of one neuron has on another. The term is typically used in artificial and biological neural network research this new approach of classification of image is based on the texture, information of color and shape. 170 aircraft color image were used for training and 200 for testing. Resulting data consist of 98% and 90% efficiency for training and testing respectively.

Keywords: Back Propagation, Color Moment, Neural Network, Wavelet Transform.

References:
June1996.

Authors: Kavita Rawat, Kavita Burse
Paper Title: A Soft Computing Genetic-Neuro fuzzy Approach for Data Mining and Its Application to Medical Diagnosis

Abstract: A novel way to enhance the performance of a model that combines genetic algorithms and neuro fuzzy logic for feature selection and classification is proposed. This research work involves designing a framework that incorporates genetic algorithm with neuro fuzzy for feature selection and classification on the training dataset. It aims for reducing several medical errors and provides better prediction of diseases. Medical diagnosis of diseases is an important and difficult task, and a proposed method performs feature selection and parameters setting in an evolutionary way. The wrapper approach to feature subset selection is used in this paper because of the accuracy. The performance of the ANFIS classifier was evaluated in terms of training performance and classification accuracy. The objective of this research is to simultaneously optimize the parameters and feature subset without degrading the ANFIS classification accuracy. To verify the effectiveness of the proposed approach, it is tested on ovarian cancer dataset.

Keywords: Feature selection, GA, ANFIS, RMSE.

References:

Authors: Hodeis Abbasi Ghadikolaei, Fereridoon Owfi, Kamyar Gharra, Mohammadreza Hayatbakhsh
Paper Title: Morphology and Systematic review of Muraenidae in Iranian Museums of the Persian Gulf and Oman Sea’s waters

Abstract: Species belonged to Muraenidae family from Anguiliformes order was apart of fish fauna in the Persian Gulf and Oman Sea. These species are economically and (nourishing) ornamentally valuable. This research revising the samples taxonomy and systematic typology of Muraenidae in south coast of Iran such as: Bushehr, Chabahar, Bandar Abbas, Bandar length and the rest from museums, universities and research centers in Iran (Fishing area51) form2007-2008. The whole Ichthyology valid published references in this area were considered. The result showed that: among 27 eels samples 13 samples were in Muraenidae family. Gymnothorax undulates was a native species in Iranian Sea zone and seven samples as: Gymnothorax sp, Gymnothorax kidako, Gymnothorax phasmatodes, Gymnothorax johnsoni, Rhinomuraena quaestia and Strophidon satente were identified and reported for the first time in the Persian Gulf and Oman Sea's waters.

Keywords: Muraenidae, systematic review, Persian Gulf, Oman Sea.

References:
Hardware Implementation of Involutional SPN Block Ciphers

Abstract: Consider the two involutional SPN (substitution-permutation network) block ciphers, namely KHAZAD and BSIN, since both of these algorithms adopt SPN structure. Investigation of the energy cost of the FPGA implementation of these two cryptographic algorithms targeted to wireless sensor networks (WSNs) has been done. Recent trends have seen the emergence of WSNs using sensor nodes based on reprogrammable hardware, such as field-programmable gate arrays (FPGAs), thereby providing flexible functionality with higher performance and speed than classical microcontroller based sensor nodes. Investigation of the hardware implementation of involutional SPN block ciphers has to be carried out since the characteristics of involution enables performing encryption and decryption using the same circuit. This characteristic is particularly suitable for a wireless sensor node which requires the function of both encryption and decryption. Further, in order to consider the suitability of a block cipher for some of the applications like wireless sensor nodes, it is most critical to consider the cost of encryption in terms of energy consumption because wireless sensor node is an energy constrained device. Hence, it is appropriate to chose two involutional SPN block ciphers namely KHAZAD and BSIN and analyze their energy efficiency for implementation in the FPGA.

Keywords: Security, block ciphers, Field programmable gate arrays, involutional.

References:

Detection of Industrial Accidents using Biomimetics

Abstract: It is of foremost importance in any industry to detect any flaws in the components that deal with volatile materials. The prevalent methods to achieve this is through static observation points. A more efficient method would be to accomplish proper surveillance through mobile robot that can navigate through the complex maze of pipes. In this paper, a method to achieve the same has been proposed, based on the ‘Biomimetics’. The proposed model has been implemented and results have been presented in the paper.

Keywords: Baud rate, Biomimetics, Zigbee.


Authors: Maitrayee Devi, A.A. Shinde

Signal Analysis of Real Time Signals to Remove Noise

Abstract: Removal of noise is very important branch in Digital Signal Processing. This paper addresses the analysis of real time signals to finally remove noise from the signals. In the proposed technique these signals are analyzed by comparing the results in Spectrum Analyzer and MATLAB. This is performed by evaluating the FFTs of first and Hanning window is applied to it. Similar process is done in MATLAB. Also noise is introduced to the signals and in the same time removed. By analyzing these real time signals we can say that the results in Spectrum Analyzer are almost same with the results in MATLAB.

Keywords: Real Time Signal, Analysis, MATLAB, Spectrum Analyzer, FFT, Frequency, Filter, Noise.


Authors: B. Naveen, K. Svaraja, M. C. P Jagdish

Parallel CRC Generation for High Speed Applications

Abstract: Cyclic redundancy check is commonly used in data communication and other fields such as data storage and data compression, as a essential method for dealing with data errors. Usually, the hardware implementation of CRC computations is based on the linear feedback shift registers (LFSRs), which handle the data in a serial way only. Though the serial calculation of the CRC codes cannot achieve a high throughput, parallel CRC calculation can significantly increase the throughput of CRC computations. Variants of CRCs are used in applications like CRC-16 BISYNC protocols, CRC32 bit in Ethernet frame for error detection, CRC8 bit in ATM, CRC-CCITT in X-25 protocol, disc storage, SDL, and XMODEM.

High speed data transmission is the current scenario in networking environment. Cyclic redundancy check (CRC) is essential method for detecting error when the data is transmitted. About the speed of transmitting data, and to synchronize with speed, it is necessary to increase speed of CRC generation. Starting from the serial architecture a recursive formula was used from which parallel design is obtained. In this paper presents 64 bits parallel CRC architecture based on F matrix with order of generator polynomial is 32. It is hardware efficient and required 50% less cycles to generate CRC with same order of generator polynomial.

In this architecture w= 64 (input) bits are parallel processed and order of generator polynomial is m= 32. If 32 bits are processed parallelly then CRC-32 will be generated after (k +m)/w cycles.Where ‘k’ indicates number of data bit and ‘m’ indicates the order of generator polynomial If we increase number of bits to be processed parallely, number of cycles required to calculate CRC can be reduced.

Keywords: Cyclic Redundancy Check, Parallel CRC calculation, Linear Feedback Shift Register, LFSR, F matrix.

Influence of Angle Ply Orientation of Stacking On Mechanical Properties of Glass-Polyester Composite Laminate

Abstract: This work investigates that the influences of angle ply orientation of stacking on mechanical properties of a E-glass general polyester and Isophthalic polyester composite laminate experimentally and comparing with the results with laminated software. He laminated software is developed based on laminate theory. Laminated Composite materials have characteristics of high modulus/weight and strength/weight ratios [1], excellent fatigue properties, and non-corroding behaviour. These advantages encourage the extensive application of composite materials, for example, in wind turbine blades, boat hulls, automobiles, water tanks, roofing, pipes and cladding, and aerospace. The understanding of the mechanical behaviour of composite materials is essential for their design and application. Although composite materials are often heterogeneous, they are presumed homogeneous from the viewpoint of macro mechanics and only the averaged apparent mechanical properties are considered. The most common method to determine these constants is static testing. In this work ten types of composite laminate specimens with different stacking sequences, i.e., (+0°, ±10°, ±30°, ±40°, ±50°, ±60°, ±75°, and ±90°) are fabricated. In this work, the specimens are prepared in the laboratory using compression mould technique E-glass as fiber & with Polyester resin as an adhesive. The specimens are prepared for testing as per ASTM standards to estimate the tensile modulus.

Keywords: compression moulding, Degree of orientation, E-glass, General purpose polyester, Isophthalic polyester, MEKP, stacking sequence, tensile property.

References:

Dense Stereo Correspondence Algorithm for Robotic Applications

Abstract: Stereo vision, the passive sensing technique for inferring the three dimensional position of objects of a scene under study is having great applications in the field of machine vision, robotics, image analysis and image reconstruction. Robotics require computationally fast and easy to implement stereo vision algorithms that will provide reliable and accurate results under real time constraints. By using some similarity measure, the stereo correspondence, tries to find out the matching pixels or objects between left and right views of the scene. Since the focus is on real time application the local winner-take-all optimization in the disparity computation process is done in this study. The correspondence is done by using fast block matching Sum of Absolute Differences (SAD) algorithm. With the help of camera parameters and the disparity map obtained from this algorithm, the depth map of the scene under study is extracted by using the principle of triangulation. To simplify the correspondence search, rectified stereo image pairs are used as inputs.

Keywords: Stereo correspondence, Sum of Absolute Differences (SAD), Disparity, Depth.

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